ACOR
AUSTRALIAN COUNCIL
OF RECYCLING

TWO-WHEELED MOBILE GARBAGE BIN SPECIFICATIONS

Published by the Australian Council of Recycling with funding from the Australian Packaging Covenant.

Contents

1. Purpose

This specification is designed to provide manufacturers a guide for 2- wheeled high density Polyethylene (HDPE) mobile garbage bins (MGBs).

The specification is in accordance with AS 4123. Companies are welcomed to provide additional information in order further to maximise the efficiency of the design and manufacturing process of MGBs.

This specification document is a benchmark for buyers and suppliers within the Australian recycling industry. ACOR welcomes feedback on all specifications at any time to ensure they reflect the current industry best practice. Individual buyers and sellers can use it as a workbook or a reference for trading and negotiation. It is not compulsory for buyers and sellers to comply with the standards. However, buyers and sellers are strongly encouraged to work together and reach an agreement regarding terms and conditions.

2. Components

Item	Item number	Material
Body	1	HDPE (1) and post consumer recycle HDPE
Lid	1	HDPE (2) and post consumer recycle HDPE
AXLE	1	Steel
Wheel	2	HDPE or rubber
Hinge pin	3	HDPE[2] and post consumer recycle HDPE

HDPE (1):

- HDPE with a typical density of 0.910- 0.970g/ cm^3
- Typical melt flow index (MFI) 4g/ 10 min @ 190^{o}C/ 2.16kg
- Stabilised against UV light
- Auto ignition temperature approximately 350/ ASTM D 1929

HDPE (2):

- HDPE with a typical density of 0.910- 0.970g/ cm^3
- MFI 7G/ 10min @ (190 ^oC/ 2.16kg)
- Stabilised against UV light
- Auto ignition temperature approximately 350/ ASTM D 1929

Steel: approximately 12µm zinc alloy coat

3. Design Requirements

3.1.Container body

- The container body must be watertight.
- The components of the main body include:
  - Lifting rim
  - Handle
  - Main body
  - Wheelbase
- The main body should have a smooth surface both inside and outside.
- The interior should be free of crevices and recesses so that the garbage, green waste or recyclables would not get trapped and making dumping easy.
- The design of the body should be compatible with the commonly used 240L lids, hinge pins, axles and wheels in Australia.
- The bin shall fulfil Australian Standard *AS 4123* performance requirements and tests. While, a specific wall thickness for the bin's body is not recommended the average is approximately 3.8mm.

Container body part	Specifications
Lifting rim	• The lifting rim should be reinforced with supporting ribs.
	• The design should ensure that the bin can be locked automatically and safely into the lifting device during lifting operations.
	• A chip nest should be located underneath the left side of the lifting rim.
Water edge	• A water edge shall be provided on the top frame of the bin to prevent rain water from entering the inside of the bin.
Shape	• The shape of the bin should be in conical so that bins are able to be nested for transport up to 14 bodies high. • The design of the stacking ribs, nesting points should allow the bins to be easily unstacked after transportation without damaging the water edge. A wider taper is also preferred.
Handle	• The handle design should be ergonomics and have a diameter of 30mm. • The handles should provide sufficient space between the bin bodies so that the bins can be handled with gloves. • The handle is connected to the body through 4 support ribs.
Wheelbase	• To ensure an even flow along each section of the body, the injection point should be balanced in the centre of the base. • The shape of the base shall be in convex to minimize any impact from falling rubbish. • The rib below the base should secure the bin during strong winds and absorbs shock after lifting operations. • Moulded yokes and ribs in the wheelbase should accommodate the axle and ensure a proper and stable fit. • The axle holes should be equipped with dimples to reduce the slack of the axle and to reduce the noise generated while wheeling the bin. • The distance from the ground to the axle centre should be 10cm to accommodate wheels with a diameter of 20cm. • The axle centre can be raised to 12.5 cm to accommodate optional 25cm wheels.

Others	• Customer specific hot stamps can be applied to the front, left or right wall of the body with a maximum printing area of 16cm x 13cm, approximately 15.5cm below the top edge. • An 8 digit alpha numeric (2 alpha and 6 numeric) serial number can be printed on the left side of the bin body. • A blowhole can be incorporated into the lifting rim.

3.2.Lid

- Two hinge pins are required to hinge the lid with the bin body to allow easy opening and closing of the MGBs.
- A moulded handle grips should be provided, to allow the user to ergonomically open the lid.
- The design should allow individual lids to nest within each other to ensure stable stacking during transportation while minimising storage capacity.

Container body part	Specifications
Hinges	• The hinge box should provide sufficient strength in order to minimize internal ribbing and reduce the possibility of garbage getting trapped. • Three hinge pins (2 required and 1 spare) should be moulded directly to the lid to ensure availability of the pin in every situation.
Shape	• The injection point should sit flat to ensure it does not interfere with stickers applied to either the inside or outside of the lid. • The internal ribs on the lid should be used as condensation ribs so that water generated from the garbage can condense underneath the lid and will drop back into the bin.

3.3. Axle

- The axle should be manufactured from solid steel and coated with a zinc alloy.
- The axle should be able to support a fully loaded bin >100 kilograms on a level, sloped or stepped surface.

3.4. Wheels

- The diameter of wheels should be 20cm, consisting of a hub, a rubber type and a retaining clip assembly.
- The rubber should be weather proof and demonstrate noise- free movement.
- The wheels should clip into the axle groove via a spring- loaded pin.
- The wheels should be consistent with all or nearly all types of MGBs.
- Each wheel should withstand a 100 kilograms of load.

4. Performance Requirements

- **Components should be;**
  - Resistant to decay via frost, heat and chemicals
  - Stable against UV light
  - Corrosion resistant, e.g. steel axle
  - Withstand exposure to high mechanical stress levels
- **Noise reduction**
  - Tight- fitting axles
  - Quiet- running solid rubber tyres

5. Appearance

- **Material components**
  - All moulded parts must not exhibit any foreign matters, cracks or bubbles.
- **Colours**
  - Weather resistant
  - The colour of bin lids should comply with AU4123 standard, as listed below:

Type of waste	Lid colour
Garbage/ General waste	Red
Recyclables	Yellow
Green waste/ organics	Lime green
Food waste	Burgundy
Paper/ cardboard	Blue

6. Testing

All bins should undertake the following tests:

- Internal stress cracking test, i.e. individual parts must not show signs cracks or deformations that may limit its functionality.
- A Drop test at room temperature with 96 kilograms of load from a 3 meter height repeated 4 times to demonstrate impact and shock resistance Ball impact test.
- Dimensional checks and;
- Any other testings that should be conducted in accordance with AU4123 standard.

7. Imprints and Markings

All bins should contain the following information:

- Name of the manufacturer,
- Year of the manufacture,
- Material used,
- Nominal volume,
- Maximum permitted total weight in kilograms and;
- AS4123 standard marking

8. Australian 2- wheeled Mobile Garbage Bin Standard Specifications

8.1. Kompakt Containers

80L Container	
Nominal volume	80 L
Net weight	approximately 85kg
Maximum load	32kg
Permitted total weight	40kg

120L All- purpose Container	
Nominal volume	120L
Net weight	approximately 9.3kg
Maximum load	48kg
Permitted total weight	60kg

140L Container	
Nominal volume	140L
Net weight	approximately 10.4kg
Maximum load	56kg
Permitted total weight	70kg

240L Container	
Nominal volume	140L
Net weight	approximately 10.4kg
Maximum load	56kg
Permitted total weight	70kg

360L Container	
Nominal volume	360L
Net weight	approximately 17kg
Maximum load	144kg
Permitted total weight	159kg

360L Commercial and Industrial Purpose Container	
Nominal volume	360L
Net weight	approximately 19kg
Maximum load	144kg
Permitted total weight	159kg

8.2. KSB Containers

240L Container	
Nominal volume	240L
Net weight	approximately 12.5kg
Maximum load	96kg
Permitted total weight	110kg (including the bin)

240L Commercial and Industrial Purpose Container	
Nominal volume	240L
Net weight	approximately 38kg
Maximum load	96kg
Permitted total weight	135kg